

## **REMARKS**

This is a full and timely response to the non-final Office Action mailed August 17, 2005. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

### **Present Status of Patent Application**

Upon entry of the amendments in this response, claims 1-37 remain pending in the present application. More specifically, claims 1-28 are unamended original claims and claims 29 – 37 have been newly submitted with no new material being added. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

#### **A. Claim Rejections under 35 U.S.C. §102(e)**

##### **Statement of the Rejection**

Claims 1, 5, 26 have been rejected under 35 U.S.C. §102(e) as being anticipated by Mayes [2002/0075862 A1].

##### **Response to the Rejection**

A proper rejection under 35 U.S.C. §102(e) requires that a single prior art reference disclose each element of the claim. Furthermore, anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. Applicants respectfully submit that claims 1, 5, and 26 are allowable and hereby request withdrawal of the rejection followed by allowance of Claims 1, 5, and 26. Responsive remarks related to individual claims are provided below.

##### **Claim 1**

The Office Action asserts that Mayes discloses: "...topographic network devices each having a physical location represented by a topographic coordinate set [Mayes, physical located, 0029] ..."

Applicants respectfully traverse this statement and assert that Mayes paragraph [0029], which discloses that "an input or egress node of the switching fabric may be physically connected (22) to a plurality of other nodes....," does not anticipate the portion of Applicants' Claim 1 cited in the Office Action.

Applicants respectfully draw attention to Mayes page 3, paragraph [0036], which discloses: "The actual physical network may not resemble a rectangular array, but the nodes (12)

within the fabric can be assigned coordinates (i,j) so that the network (10) is in effect topologically flat, where i represents the row and j represents the column.” (Emphasis added).

Mayes’ coordinates (i,j) define each switching node of an array of switching nodes using the row-column position of the switching node in this array.

In contrast, the network devices of Applicants’ Claim 1 are “topographic network devices each having **a physical location represented by a topographic coordinate set...**”

This aspect of Applicants’ network devices has been described in Applicants’ original specification. In this regard, attention is drawn to Applicants’ original specification paragraph [0020], which states in pertinent part:

In the exemplary wide-area network shown in Figure 1, the network address of each topographic network device includes a geographic coordinate set composed of the latitude and longitude (degrees North, degrees West) of the global location of the network device.

Furthermore, Applicants’ original specification paragraph [0022] states:

Topographic coordinate sets composed of other geographic or topographic coordinates may be used instead of latitude/longitude geographic coordinate sets shown. For example, a topographic network device in a local area network installed in a single-story building can have a two-dimensional Cartesian coordinate set (x,y) as the topographic coordinate set in its network address. A topographic network device in a local area network installed in a multi-story building can have a three-dimensional Cartesian coordinate set (x,y,z) as the topographic coordinate set in its network address. The term topographic coordinate set as used in this disclosure will be used to encompass such alternatives.

The topographic coordinate sets of topographic network addresses that have substantially coincident physical locations in the topographic coordinate system can include an additional numeric or other field that distinguishes such topographic network devices from one another.

Consequently, Applicants respectfully assert that Mayes does not explicitly teach or disclose “topographic network devices each having a physical location represented by a topographic coordinate set [Mayes, physical located, 0029] ...” as asserted in the Office Action.

Because a proper rejection under 35 U.S.C. §102(e) requires that a single prior art reference disclose each element of the claim, Applicants respectfully assert that the rejection of Claim 1 is improper for at least the reasons mentioned above. Consequently, Applicants request withdrawal of the rejection of Claim 1 followed by allowance of Claim 1.

#### **Claim 5**

The Office Action asserts: “*Mayes discloses ones of the topographic network devices capable of originating the message for transmittal through the network to another of the topographic network devices as a destination network device* [Mayes, source and destination,

0024] each include a topographic addressing engine that operates to include the topographic coordinate set of the destination network device in the message [Mayes, computing the coordinates of said second node (or destination node) by performing modulo arithmetic of the coordinates of said first node, [0013].” (Emphasis added)

Applicants respectfully draw attention to Mayes page 3, para [0041] which includes: “In a first embodiment, a recursion methodology is used by the central controller (24) to set the interconnections between router modules (12) in the network (10),” and further describes this process in page 4, para [0043], as “using modulo arithmetic.”

However, Mayes does not disclose a message as described by Applicants’ Claim 5, moreso one having “the topographic coordinate set of the destination network device in the message.”

Applicants respectfully assert that for at least this reason, Claim 5 is allowable. Claim 5 is further allowable because it depends upon allowable Claim 1 and is therefore allowable as a matter of law. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Consequently, Applicants respectfully request withdrawal of the rejection followed by allowance of Claim 5.

#### **Claim 26**

The Office Action asserts that: “*Claim 26 contains the similar limitations set for in claim 1. Therefore claim 26 is rejected for the same rationale as set forth claim 1.*”

Applicants respectfully traverse this assertion. Claim 1 is related to “a network for communication a message” and discloses various elements of this network. On the other hand, Claim 26 is related to “a computer-readable medium in which is fixed a computer program that instructs a computer...” and discloses various steps of a “message addressing method.” Each of these steps is distinctly defined and bears no direct correspondence to the various elements of Claim 1.

For example, Claim 26 includes: “determining whether a valid topographic reply-to-field exists in the original message...” and “copying the topographic coordinate set from the topographic reply-to-field of the original message...” while Claim 1 includes “topographic network devices and communication links...” It is unfortunate that the Office Action fails to identify how “*Claim 26 contains the similar limitations set for in claim 1.*”

Applicants respectfully assert that the cited prior art of Mayes does not disclose each of the elements of Applicants’ Claim 26. As one among several examples, Mayes does not disclose “copying the topographic coordinate set from the topographic reply-to field of the original message to the destination coordinate set field of the reply message.”

Consequently, Applicants respectfully assert that Claim 26 is allowable and request withdrawal of the rejection followed by allowance of Claim 26.

**B. Rejections under 35 U.S.C. §103(a)**

**Statement of the rejection**

The Office Action states that “Claims 6-25, 27, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayes [2002/0075862 A1] in view of Huang [5,841,775].

**Response to the rejection**

Attention is respectfully drawn to MPEP 706.2(j) *Contents of a 35 U.S.C. 103 Rejection*, which states in pertinent part:

To establish a *prima facie* case of obviousness, **three basic criteria** must be met. First, there must be some **suggestion or motivation**, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be **a reasonable expectation of success**. Finally, the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - § 2143.03 for decisions pertinent to each of these criteria. (Emphasis added)

Responsive remarks related to individual claims are provided below using the criteria described in MPEP 706.2(j).

**Claim 6**

The first of the three basic criteria that must be met to establish a *prima facie* case of obviousness relates to some suggestion or motivation being present to modify the reference or to combine reference teachings. Mayes provides in his “Background of invention,” several details pertaining to shortcomings in prior art, but does not suggest any shortcomings in his invention especially any shortcomings related to the placement of his network nodes or related to routing using his recursion methodology. Consequently, one of ordinary skill in the art would not be motivated “to incorporate the shortest path as taught by Huang into the Mayes apparatus in order to utilize the routing process,” as asserted in the Office Action. Applicants respectfully traverse this Office Action statement, and assert that the rejection fails to satisfy the first of the MPEP criteria for establishing a *prima facie* case of obviousness.

The Office Action further fails to explain how the cited prior art of Mayes and Huang can be combined with a reasonable expectation of success. For example, the OSPF or closest path routing of Huang that is referred to in the Office Action may not necessarily satisfy all the

routing criteria specified by Mayes. Such criteria include providing for routing of “incoming traffic across the switch fabric of a distributed router in a systematic manner that allows load balancing and diffusivity while eliminating internal blocking.” - Mayes para [0002] and “The present invention is directed to internal router interconnectivity. It optimizes use of the network’s distributed resources by maximizing diffusivity of traffic across the switch fabric.” – Mayes Abstract.

Persons of ordinary skill in the art will recognize that non-blocking routing does not necessarily go hand-in-hand with shortest path routing. Therefore, Applicants respectfully assert that the rejection fails to satisfy the second of the MPEP criteria for establishing a *prima facie* case of obviousness.

Applicants further assert that the rejection fails to satisfy the third of the three criteria, vis-à-vis “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” This assertion is justified below in further detail.

Mayes invention is titled “Recursion based switch fabric for aggregate TIPOR,” which is described in Mayes Summary section [0010] as “*a method and apparatus for interconnecting a plurality of nodes in a network having an ingress and an egress.*” Towards this end, Mayes employs “*a central controller having a processor and memory and an array of switching nodes operably connected to the central controller. Furthermore, the memory comprises programming instructions to create logical interconnections between the array of switching nodes. In addition, the programming instructions further comprise instructions to assign a coordinate to each of said nodes in said network and create the logical interconnections recursively by application of the present invention.*” page 1, para [0015].

In substantiating the rejection of claim 6, the Office Action asserts: “As per claim 6, Mayes discloses the message includes the topographic coordinate set of a destination device as a destination coordinate set...” (Emphasis added) However, Applicants have been unable to find in Mayes or in Huang, individually or in combination, such a message, especially a message as defined in Applicants’ Claim 6. Consequently, Applicants respectfully assert that the rejection fails to satisfy the third of the three MPEP criteria.

For at least the reasons described above, Applicants respectfully assert that the rejection of Claim 6 under 35 U.S.C. 103(a) is improper and hereby request withdrawal of the rejection followed by allowance of Claim 6.

#### **Claims 7 - 14**

In the interests of brevity the remarks pertaining to the first two MPEP criteria, as described above with reference to Claim 6, will not be repeated here. However the remarks

are equally applicable to Claims 7-14.

Addressing the third MPEP criterion, each of Claims 7-14 contain elements that are not disclosed in the cited prior art individually or in combination. This is because Claims 7-14 are dependent directly or indirectly on Claim 1, and consequently each of Claims 7-14 includes all the elements of independent Claim 1. Claim 1 currently includes “topographic network devices each having a physical location represented by topographic coordinate set comprising a latitude and a longitude and having a network address that includes the topographic coordinate set,” which is not disclosed in the cited prior art individually or in combination

Therefore, Applicants respectfully assert that the third of the three criteria, vis-à-vis “the prior art reference (or references when combined) must teach or suggest all the claim limitations,” cannot be satisfied.

For at least the reasons described above, Applicants respectfully assert that the rejection of Claims 7-14 under 35 U.S.C. 103(a) is improper and hereby request withdrawal of the rejection followed by allowance of Claims 7-14.

#### **Claim 15**

The first of the three basic criteria that must be met to establish a *prima facie* case of obviousness relates to some suggestion or motivation being present to modify the reference or to combine reference teachings. It is unfortunate that the Office Action fails to disclose where in the cited prior art references or in the knowledge generally available to one of ordinary skill in the art, can be found a suggestion or motivation to modify the cited references or to combine reference teachings. Consequently, Applicants respectfully assert that the rejection fails to satisfy the first of the MPEP criteria for establishing a *prima facie* case of obviousness.

The rejection also fails to satisfy the second MPEP criterion, because the Office Action fails to explain how the cited prior art of Mayes and Huang can be combined with a reasonable expectation of success. For example, the OSPF or closest path routing of Huang that is referred in the Office Action may not necessarily satisfy all the routing criteria specified by Mayes. Such criteria include providing for routing of “incoming traffic across the switch fabric of a distributed router in a systematic manner that allows load balancing and diffusivity while eliminating internal blocking.” - Mayes para [0002]. Persons of ordinary skill in the art will recognize that non-blocking routing does not necessarily go hand-in-hand with shortest path routing. Therefore, Applicants respectfully assert that the rejection fails to satisfy the second of the MPEP criteria for establishing a *prima facie* case of obviousness.

Applicants further assert that the rejection fails to satisfy the third of the three criteria, vis-à-vis “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” This assertion is justified below in further detail.

Mayes invention is titled “Recursion based switch fabric for aggregate TIPOR,” which is described in Mayes Summary section [0010] as “*a method and apparatus for interconnecting a plurality of nodes in a network having an ingress and an egress.*” Towards this end, Mayes employs “*a central controller having a processor and memory and an array of switching nodes operably connected to the central controller. Furthermore, the memory comprises programming instructions to create logical interconnections between the array of switching nodes. In addition, the programming instructions further comprise instructions to assign a coordinate to each of said nodes in said network and create the logical interconnections recursively by application of the present invention.*” [para 0015].

In substantiating the rejection of claim 15, the Office Action asserts: “...the channels including a first channel via which the message is received [Mayes, channels, 0076].” (Emphasis added) However, Applicants have to be unable to find in Mayes or in Huang, individually or in combination, such a message, especially a message as defined in Applicants’ Claim 15, which includes: “a topographic processor that operates in response to the connected device *coordinate sets stored in the coordinate store and the destination coordinate set of the message* to identify a second channel to which to forward the message, the second channel being another of the channels.” Consequently, Applicants respectfully assert that the rejection fails to satisfy the third of the three MPEP criteria.

For at least the reasons described above, Applicants respectfully assert that the rejection of Claim 15 under 35 U.S.C. 103(a) is improper and hereby request withdrawal of the rejection followed by allowance of Claim 15.

#### **Claims 16 - 25**

In the interests of brevity the remarks pertaining to the first two MPEP criteria, as described above with reference to Claim 15, will not be repeated here. However the remarks are equally applicable to Claims 16-25.

Addressing the third MPEP criterion, each of Claims 16-25 contain elements that are not disclosed in the cited prior art individually or in combination. This is because Claims 16-25 are dependent directly or indirectly on Claim 15, and consequently each of Claims 16-25 includes all the elements of independent Claim 15. Claim 15 currently includes “a topographic processor that operates in response to the connected device coordinate sets stored in the coordinate store and the destination coordinate set of the message to identify a second

channel to which to forward the message, the second channel being another of the channels.” which is not disclosed in the cited prior art individually or in combination.

Therefore, Applicants respectfully assert that the rejection fails to satisfy the third of the three criteria, vis-à-vis “the prior art reference (or references when combined) must teach or suggest all the claim limitations.”

For at least the reasons described above, Applicants respectfully assert that the rejection of Claims 16-25 under 35 U.S.C. 103(a) is improper and hereby request withdrawal of the rejection followed by allowance of Claims 16-25.

#### **Claims 27-28**

The Office Action rejects Claims 27-28 by asserting that they “contain similar limitations set for in claims 9, 24.” Applicants respectfully traverse the Office Action assertion because it is an improper statement.

Specifically, Claim 9 pertains to “a network for communication a message” and Claim 24 pertains to “a topographic network device.” On the other hand, Claims 27-28 pertain to “a computer-readable medium in which is fixed a computer program that instructs a computer...” and discloses various steps of a “message addressing method.” Each of these steps is distinctly defined and bears no direct correspondence to the various elements of Claims 9 and 24.

Nonetheless, Applicants provide below additional reasons that indicate that the rejection of Claims 27-28 under 35 U.S.C. 103(a) is improper.

The first of the three basic MPEP criteria that must be met to establish a *prima facie* case of obviousness relates to some suggestion or motivation being present to modify the reference or to combine reference teachings. It is unfortunate that the Office Action fails to disclose where in the cited prior art references or in the knowledge generally available to one of ordinary skill in the art, can be found a suggestion or motivation to modify the cited references or to combine reference teachings. Consequently, Applicants respectfully assert that the rejection fails to satisfy the first of the MPEP criteria for establishing a *prima facie* case of obviousness.

The rejection also fails to satisfy the second MPEP criterion, because the Office Action fails to explain how the cited prior art of Mayes and Huang can be combined with a reasonable expectation of success. For example, the OSPF or closest path routing of Huang that is referred in the Office Action may not necessarily satisfy all the routing criteria specified by Mayes. Such criteria include providing for routing of “incoming traffic across the switch fabric of a distributed router in a systematic manner that allows load balancing and diffusivity while eliminating internal blocking.” - Mayes para [0002]. Persons of ordinary skill in the art will recognize that non-blocking routing does not necessarily go hand-in-hand with shortest path



routing. Therefore, Applicants respectfully assert that the rejection fails to satisfy the second of the MPEP criteria for establishing a *prima facie* case of obviousness.

Applicants further assert that the rejection fails to satisfy the third of the three criteria, vis-à-vis “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” This assertion is justified below in further detail.

Mayes invention is titled “Recursion based switch fabric for aggregate TIPOR,” which is described in Mayes Summary section [0010] as “*a method and apparatus for interconnecting a plurality of nodes in a network having an ingress and an egress.*” Towards this end, Mayes employs “*a central controller having a processor and memory and an array of switching nodes operably connected to the central controller. Furthermore, the memory comprises programming instructions to create logical interconnections between the array of switching nodes. In addition, the programming instructions further comprise instructions to assign a coordinate to each of said nodes in said network and create the logical interconnections recursively by application of the present invention.*” page 1, para [0015].

Huang’s invention is titled “Scalable switching network” and does not use a “topographic network message addressing method” such as the one defined in Applicants’ individual Claims 27 and 28 (each claim being coupled to independent Claim 26).

Applicants respectfully assert that the cited prior art of Mayes and Huang do not disclose, individually or combinedly, each of the elements of Applicants’ individual Claims 28 and 29. The cited prior art fails to at least disclose: “determining whether a valid topographic reply-to field exists in the original message.” Consequently, Applicants respectfully assert that the rejection fails to satisfy the third of the three MPEP criteria.

For at least the reasons described above, Applicants respectfully assert that the rejection of Claims 27 and 28 under 35 U.S.C. 103(a) is improper and hereby request withdrawal of the rejection followed by allowance of Claims 27 and 28.

### **C. Rejections under 35 U.S.C. §103(a)**

#### **Statement of the rejection**

The Office Action states that “Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayes [2002/0075862 A1] in view of Wallner [6,703,947 B1].

#### **Response to the rejection**

Responsive remarks related to individual claims are provided below using the criteria described in MPEP 706.2(j).

## **Claim 2**

The Office Action asserts: “Therefore it would have been obvious to an ordinary skill in the art at the time invention was made to incorporate the GPS transmits and receives the topographic element using a coordinates system as taught by Wallner into the Mayes apparatus in order to utilize the array coordinates in a topological network nodes. Doing so would enhanced interconnectivity of the interconnecting network via GPS and Internet.” (reproduced verbatim)

Applicants respectfully traverse the Office Action statement reproduced above and assert that the rejection fails to satisfy the first of the MPEP criteria for establishing a *prima facie* case of obviousness.

The first of the three basic criteria that must be met to establish a *prima facie* case of obviousness relates to some suggestion or motivation being present to modify the reference or to combine reference teachings. Mayes invention is titled “Recursion based switching fabric for aggregate TIPOR,” and discloses in “Background of invention,” several details pertaining to shortcomings in prior art. However Mayes does not suggest any shortcomings in his own invention especially any shortcomings related to routing using his recursion methodology.

Wallner’s invention is directed towards optimizing “spatial data to achieve minimum download data size for cartographic applications” (Wallner col.1, lines 9-10). Wallner does not teach or suggest the use of a topographic coordinate set for interconnecting his network.

Consequently, Applicants respectfully assert that the Office Action fails to satisfy the first criterion for establishing a *prima facie* case of obviousness because it fails to clearly disclose some suggestion or motivation present in the cited references or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

Applicants further assert that the rejection fails to satisfy the third of the three criteria, vis-à-vis “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” This assertion is justified below in further detail.

The Office Action admits that Mayes does not explicitly detail “a global positioning system receiver at least temporarily connected to one of the topographic network devices to supply the topographic coordinate set thereto,” but adds that Wallner discloses “a network of multi switching nodes such as Internet connected to a GPS to transmit a topographic element using a coordinate system [Wallner, Fig 4, col 7, lines 40-45].”

Applicants respectfully traverse this assertion due to the reasons provided below.

Applicants' Claim 2 is dependent on Claim 1, which includes topographic network devices having a network address that includes the topographic coordinate set. Wallner does not teach or disclose the use of a topographic coordinate set in a network address. To the contrary, Wallner incorporates a coordinate system into a file name rather than into a network address. In this connection, attention is drawn to Wallner col. 5, lines 8-43, which explains file name generation (block 15 of FIG. 1) where "a file name is assigned to the data segment." The file name is "comprised of a total of four numbers," including latitude and longitude offsets. The file name is additionally described using Wallner's FIG. 3.

Consequently, Applicants respectfully assert that the rejection fails to satisfy the third of the three MPEP criteria because the cited references, individually or combinedly, do not disclose at least that aspect of Applicant's Claim 2 (dependent on Claim 1) relating to topographic network devices having a network address that includes the topographic coordinate set.

For at least the reasons described above, Applicants respectfully assert that the rejection of Claim 2 under 35 U.S.C. 103(a) is improper and hereby request withdrawal of the rejection followed by allowance of Claim 2.

#### **Claims 3-4**

In the interests of brevity the response provided above to the rejection of Claim 6 will not be repeated here. However these remarks are equally applicable to Claims 3 and 4 that are also dependent upon Claim 1.

Applicants respectfully assert that the rejection of Claims 3 and 4 under 35 U.S.C. 103(a) is improper and hereby request withdrawal of the rejection followed by allowance of Claims 3 and 4.

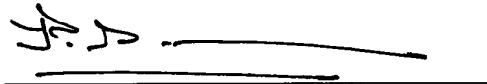
#### **Prior Art Made of Record**

The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

### CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicant respectfully submits that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that claims 1-37 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned representative at (404) 610-5689.

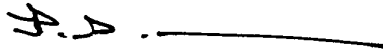
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, P. O. Box 1450, Alexandria, VA, 22313-1450, on 15 November 2005



Signature  
Name: P. S. Dara